

Application No.: 09/831,516
Amendment dated: February 26, 2004
Reply to Office Action of August 26, 2003

This listing of claims will replace all prior versions and listings of claims in this application:

a.) Listing of Claims

1. (Currently amended) An aerodynamic method of making tissue paper comprising the steps:

- (a) preparing an aerosuspension of fibrous material;
- (b) forming a layer of fibers on a forming wire;
- (c) transferring the layer of fibers to a profiling belt having a pressing surface containing protruding elements for impressing first areas of the fibrous layer in contact therewith;
- (d) contacting the layer of fibers disposed on the pressing surface of the profiling belt with a moistening belt having a lower sorption capacity than that of the first areas of the fibrous layer to be impressed by the protruding elements and higher than that of second areas of the fibrous layer that are not to be impressed by the protruding elements; and
- (e) ~~pressing the layer of fibers between the profiling belt and the moistening belt~~ selectively moistening the first areas of the layer of fibers by pressing the layer of fibers between the protruding elements of the profiling belt and the moistening belt.

~~wherein the moistening belt has a lower sorption capacity than a sorption capacity of the first areas of the fibrous layer being impressed by the protruding elements and higher than a sorption capacity of second areas of the fibrous layer that are not impressed by the protruding elements.~~

2. (Original) The method of claim 1, wherein the step of transferring comprises a step of transferring the layer of fibers to a profiling belt having a pressing surface containing protruding elements for impressing first areas of the fibrous layer in contact therewith, and a distance between mutually-adjacent protruding elements is not greater than an average length of individual fibers of the layer of fibers.

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3. (Original) The method of claim 1, wherein the step of transferring is performed using a profiling belt that comprises a wire made of threads interwoven such that nodes formed by said interwoven threads form the protruding elements of the pressing surface, and the protruding elements having relatively flat surface areas contacting the layer of fibers.

4. (Original) The method of claim 1, wherein the step of contacting comprises a step of contacting the layer of fibers disposed on the pressing surface of the profiling belt with a moistening wire.

5. (Original) The method of claim 1, wherein the step preparing an aerosuspension comprises a step of preparing an aerosuspension of fibrous material having a moisture content that provides saturation of walls of the fibers.

6. (Withdrawn) An apparatus for making tissue paper by an aerodynamic method, the apparatus comprising:

a forming wire for receiving an aerosuspension of fibers and forming a layer of fibers thereon;

a profiling belt having a pressing surface comprising protruding elements configured and arranged for contacting first areas of said layer of fibers, thereby impressing the first areas of said layer of fibers;

a moistening belt comprising a material having a sorption capacity lower than a sorption capacity of the first areas of said layer of fibers, and higher than a sorption capacity of second areas of said layer of fibers that are not contacted by said protruding elements; and

a pressing assembly for impressing the layer of fibers between the profiling belt and the moistening belt.

7. (Withdrawn) The apparatus of claim 6, wherein said pressing assembly comprises a pair of pressure rollers for exerting a force on the layer of fibers, the profiling belt, and the moistening belt.

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8. (Withdrawn) The apparatus of claim 6, wherein a distance between mutually-adjacent protruding elements of the pressing surface of said profiling belt is not greater than an average length of individual fibers of the layer of fibers.

9. (Withdrawn) The apparatus of claim 6, wherein the protruding elements of said pressing surface have elliptical profiles.

10. (Withdrawn) An aerodynamic method for tissue paper making comprising the steps: prepare an of aerosuspension out of cellulose fibers or other fibrous material, forming of a layer of fibers on a moving forming wire;

moistening the formed layer of fibers; and
and pressing and drying said formed layer;.

wherein the pressing is performed by a pressing means having a pressing surface, for contacting with said layer of fibers, which is made as a relief surface and the distance between the protruding relief elements on the pressing surface doesn't exceed the average length of fibers; and,

wherein the method is distinguished by the fact that during pressing, the formed layer of fibers is placed on an additional profiling felt, the surface of which facing said layer of fibers represents said pressing surface, and moistening of the formed layer of fibers is performed concurrently with pressing for which purpose an additional moistening felt is used, and said moistening felt is accommodated in such a way that pressing action is exerted concurrently on profiling and moistening felts and on the layer of fibers located between said felts, and such a material is used as a moistening felt the sorption capacity of which is lower than sorption capacity of those areas of said layer of fibers that are pressed due to the protruding relief elements, and at the same time the sorption capacity of said material is higher than the areas of said layer of fibers that are non-pressed by said relief elements, and saturation of moistening felt with water is performed outside the pressing zone.